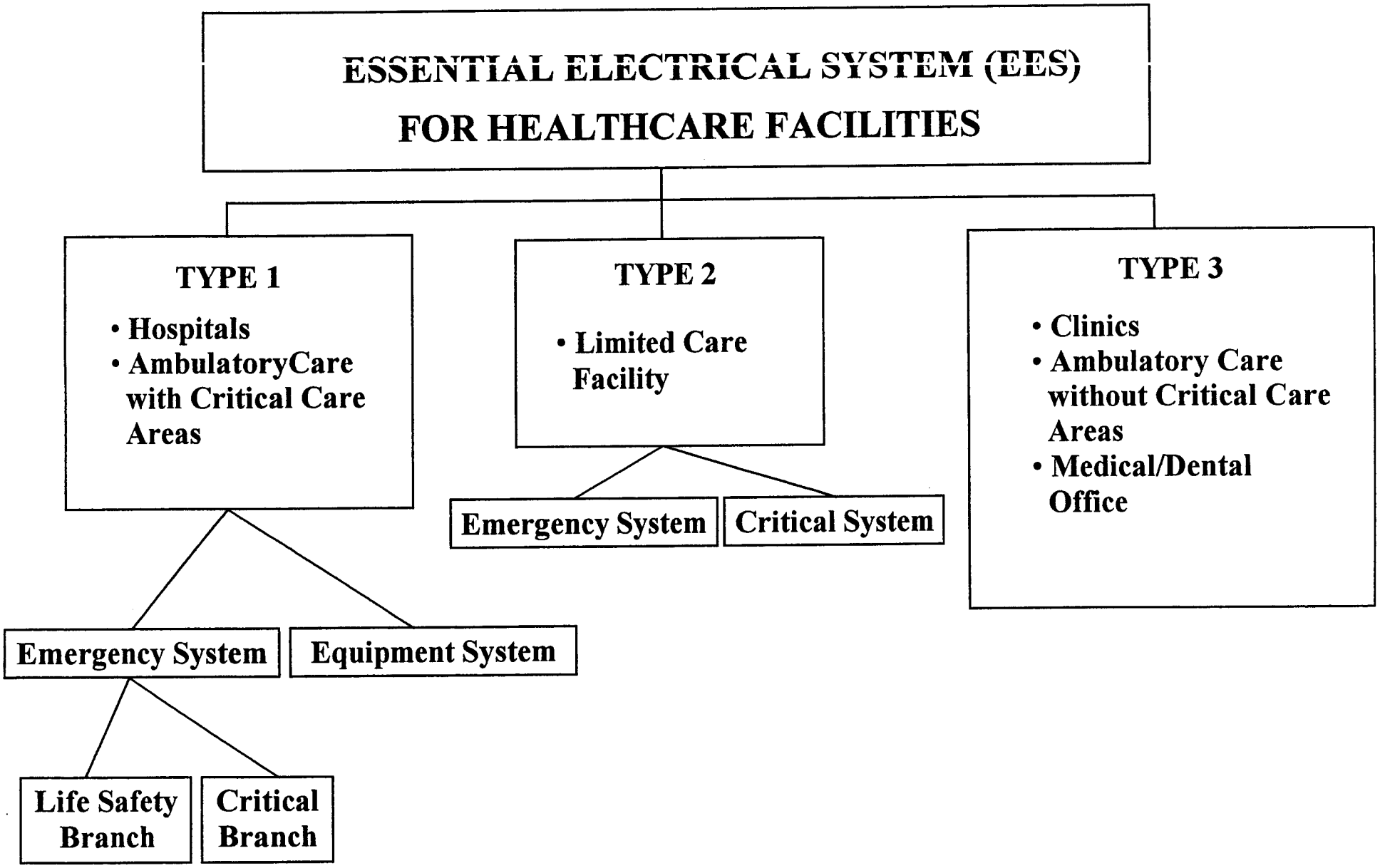
ESSENTIAL ELECTRICAL SYSTEM (EES)
FOR HEALTHCARE FACILITIES
TYPE 1
• Hospitals
• AmbulatoryCare with Critical Care Areas
TYPE 2
• Limited Care Facility
TYPE 3
• Clinics
• Ambulatory Care without Critical Care Areas
• Medical/Dental Office
Emergency System
Critical System
Emergency System
Equipment System
Life Safety Branch
Critical Branch

# Stored Emergency Power Supply Systems

## *Where can they be used?*

Are hospitals responsible for stored emergency power supply systems (SEPSSs)? No. Hospitals are not affected by the SEPSSs requirement in EC.2.10.4.1 (formerly EC.2.14). (See Table A, below.) Not unless they have associated ambulatory care or other clinics.

### Hospitals must have generators

A hospital must have *an on-site prime mover (that is, a generator)*. NFPA 99® requires it—it's called a "type 1 system." NFPA 99® does not permit hospitals to have SEPSSs. A hospital must have a prime mover that can be refueled. A SEPSS would not be acceptable because it will run out of power at some point, and that would certainly compromise many patients.

SEPSSs are intended to automatically supply illumination or power to critical areas and equipment that is essential for safety to human life. Included are

- systems that supply emergency power for such functions as illumination for safe exiting,
- ventilation where it is essential to maintain life,
- fire detection and alarm systems,
- public safety communications systems, and
- processes where the electrical current interruption would produce serious life safety or health hazards to patients, visitors, or staff members.

**Table A: Joint Commission standard EC.2.10.4.1**

**EC.2.10.4.1 Emergency power systems are maintained, tested, and inspected**

**Intent of EC.2.10.4.1**
**Hospitals demonstrate reliability of the emergency power systems by . . .**

| Items c and d address generators—type 1 systems* | Items a and b address SEPSSs—and other type 3 systems |
|---|---|
| c. testing each generator 12 times a year, with testing intervals not less than 20 days and not more than 40 days. These tests shall be conducted for at least 30 continuous minutes under a dynamic load that is at least 30% of the nameplate rating of the generator; and | a. testing all battery-powered lights required for egress. Testing includes<br>• a functional test at 30-day intervals for a minimum of 30 seconds; and<br>• an annual test for a duration of 1½ hours |
| d. testing all automatic transfer switches 12 times a year, with testing intervals not less than 20 days and not more than 40 days. | b. testing stored emergency power supply systems (SEPSSs), whose malfunction may cause a severe hazard to life and safety of the occupants.* Testing includes<br>• a quarterly functional test for 5 minutes or as specified for its class,† whichever is less; and<br>• an annual test at full load for 60% of the full duration of its class† |

*Note: Hospitals may choose to test to less than 30% of the emergency generator's nameplate. However, these hospitals shall in addition to performing a test for 30 continuous minutes under operating temperature (at the intervals described above) revise the existing documented management plan to conform to current NFPA 99® and NFPA 110® testing and maintenance activities. These activities shall include inspection procedures for assessing the prime mover's exhaust gas temperature against the minimum temperature recommended by the manufacturer.*

*If diesel-powered generators do not meet the minimum exhaust gas temperatures as determined during these tests, they shall be exercised for 30 continuous minutes at the intervals described above with available EPSS load, and exercised annually with supplemental loads of*

- *25% of nameplate rating for 30 minutes, followed by*
- *50% of nameplate rating for 30 minutes, followed by*
- *75% of nameplate rating for 60 minutes, for a total of two continuous hours.*

*SEPSSs are intended to automatically supply illumination or power to critical areas and equipment essential for safety to human life. Included are systems that supply emergency power for such functions as illumination for safe exiting, ventilation where it is essential to maintain life, fire detection and alarm systems, public safety communications systems, and processes where the current interruption would produce serious life safety or health hazards to patients, visitors, or staff.*

*Note: Other, non-SEPSS battery backup emergency power systems that an organization has determined to be critical for operations during a power failure (eg, laboratory equipment, medical records) should be properly tested and maintained in accordance with manufacturers' recommendations.*

†*Class* defines the minimum time for which the SEPSS is designed to operate at its rated load without being recharged.

## Table B: NFPA 99® Electrical System Type Requirements by Setting

| NFPA 99®, 1996 edition | Chapter 12 Hospital | Chapter 12 Hospital Laboratory | Chapter 13 Ambulatory | Chapter 13 Ambulatory Laboratory | Chapter 14 Clinic | Chapter 15 Medical Dental Office (if inhalation anesthesia, go to Ambulatory) | Chapter 16 Nursing Home |
|---|---|---|---|---|---|---|---|
| Type 1 electrical system | Required 12–3.3.2 | | Required only if critical care areas are present 13–3.3.2 | | Required if life support equipment required 14–3.3.2 | Required if life support equipment required 15–3.3.2 | |
| Type 2 electrical system | | | | | | | Required 16–3.3.2 |
| Type 3 electrical system | | | Permitted if no critical care areas are present 13–3.3.2 | | Permitted if no life support required 14–3.3.2 | Permitted if no life support required 15–3.3.2 | Permitted if no life support, anesthesia, has battery backup 16–3.3.2 |
| Level 1 gas | If installed 12–3.4.1 | | If installed (med air may be simplex) 13–3.4 | | If installed (if not rendered incapable, med air may be simplex) 14–3.4.1 | Required if over 3,000 cu ft 15–3.4.1 | If installed (med air may be simplex) 16–3.4.1 |
| Level 3 gas | Permitted if not served by central gas system | | | | | If installed (less than 3,000 cu ft) 15–3.4.1 | |
| Level 4 gas | | If installed 12–3.4.4 | | If installed 13–3.4.4 | | | |
| Level 1 vacuum | If installed 12–3.4.3 | | If installed 13–3.4.1 | | If installed (if not rendered incapable, vacuum may be simplex) 14–3.4.2 | If installed and surgical 15–3.4.6 | If installed 16–3.4.2 |
| Level 3 vacuum | | | | | | If not surgical, 15–3.4.7 | |
| Level 4 vacuum | | If installed 12–3.4.5 | | If installed 13–3.4.5 | | | |

## Some ambulatory settings can have SEPSSs

Very limited areas are permitted to use SEPSSs. Table B, above—which contains the requirements of NFPA 99® relating to power systems, gas, and vacuum—shows exactly what settings are permitted to have SEPSSs. An example of a permitted application would be an outpatient clinic with no anesthesia or life support, where only enough power to terminate minor procedures and evacuate the facility is needed.

NFPA 99® defines type 3 systems to include SEPSSs. Type 3 systems are allowed to be

a) generators;

b) SEPSSs (battery systems); or

c) batteries that are integral to equipment.

## Which Joint Commission standards apply?

In Joint Commission standard EC.2.10.4.1, **items c and d address type 1 systems**, which are generators.

However, **items a and b address type 3 systems**, which includes SEPSSs. (See Table A.)

## A simple emergency light is not a SEPSS

Suppose a hospital installs an emergency lighting system in addition to its prime mover. Is this considered a SEPSS?

No. Therefore, a hospital is not responsible for testing these non-SEPSS systems using items a and b of EC.2.10.4.1. The requirements for SEPSSs apply only to organizations that are permitted to use SEPSSs.

Of course, any non-SEPSS battery backup emergency power systems that an organization has determined to be critical for operations during a power failure (for example, those for laboratory equipment or medical records) should be properly tested and maintained in accordance with manufacturers' recommendations.